

TWO NEW SPECIES OF *ICHTHYOTHERE*  
(HELIANTHEAE: ASTERACEAE)  
FROM ECUADOR AND PERU

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ABSTRACT

The tuberculate-fruited *Ichthyothere pastazensis* from Ecuador and the pinnately veined *I. macdanielii* from Peru are described as new.

RESUMEN

Se describen como nuevas especies *Ichthyothere pastazaensis*, con frutos tuberculados, de Ecuador y *I. macdanielii*, de hojas pinnatinervias, de Perú.

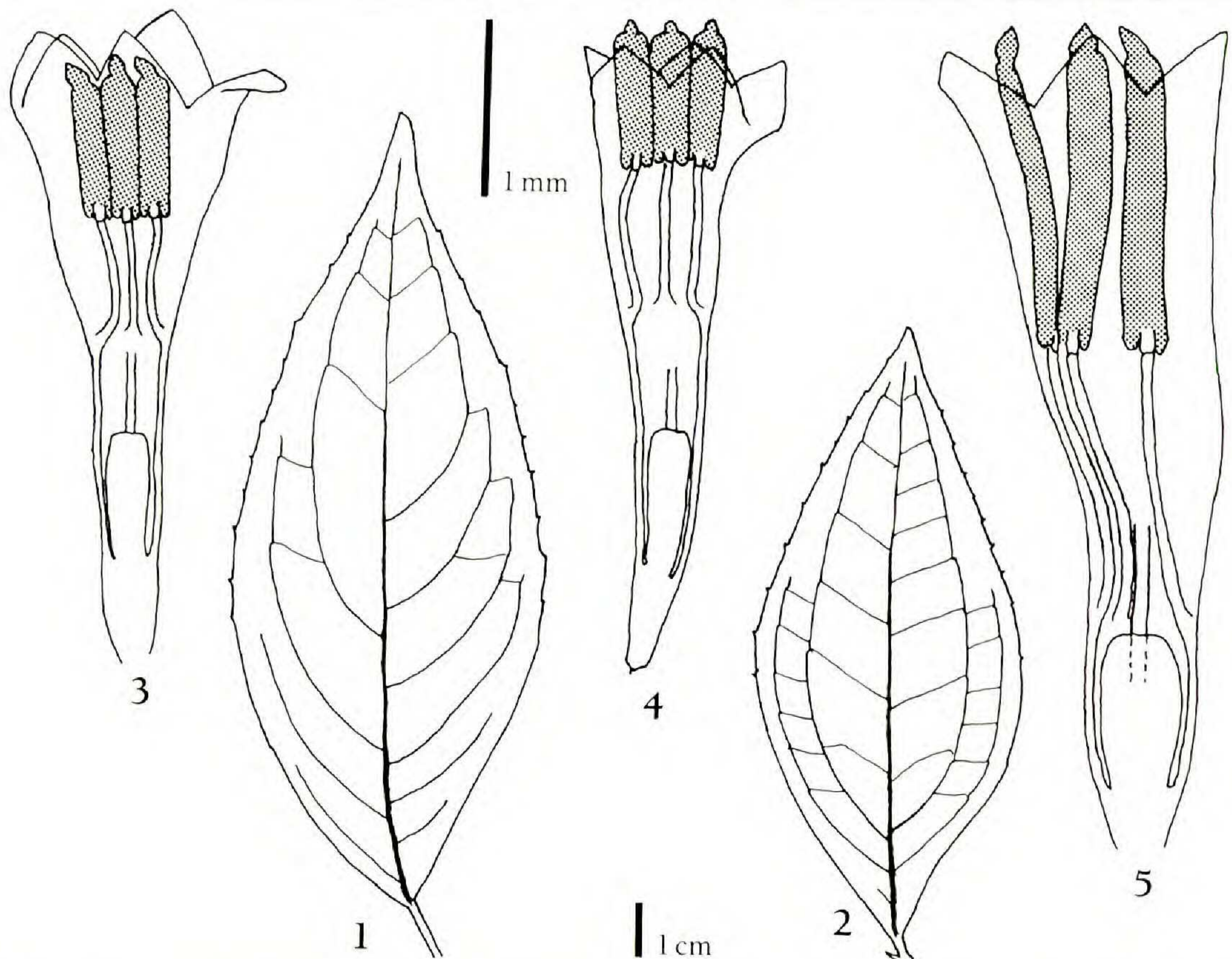
Andean material of the genus *Ichthyothere* has been reviewed for the treatment of the Heliantheae in the Flora of Ecuador, and two undescribed species have been detected. Both new species are related to *I. peruviana* Poepp. but occur to the north of the range of that species. *Ichthyothere pastazensis* of eastern Ecuador has tuberculate achenes while *I. macdanielii* has pinnately veined leaves.

***Ichthyothere macdanielii* H. Rob., sp. nov. (Figs. 1, 3, 6)**

Ad *I. peruviana* affinis sed in foliis pinnate nervatis differt.

Shrubs to 1.2 m high, moderately branched; stems blackish, hirsute with pale hairs, internodes 4–12 cm long, fistulose. Leaves opposite, petioles 0.5–1.0 cm long; leaf blades elliptical to obovate, thinly herbaceous, 9–21 cm long, 2.5–7.0 cm wide, base acute to cuneate, margins minutely denticulate to serrulate, apex shortly and broadly acuminate, upper surface with weak, long pilosity, lower surface pilosulous, especially on veins, with sparse, minute glandular dots; secondary veins pinnate, 5 or 6 on each side, arching but mostly ending below distal third of blade. Inflorescences terminal and sessile on leafy stems and branches, glomerate or with few short, dense seriate-cymes, branches covered with subulate bracteoles ca. 5 mm long. Heads sessile, subspherical to somewhat obovate, 4–6 mm high; outer large involucre bracts 2 or 3, subtending female florets, moderately concave, broadly oblong to suborbicular, 4–6 mm long and wide, broadly apiculate, with many stout, multiseriate hairs outside; inner bracts and pales ca. 30, subtending male florets, obovate, 3.5–4.5 mm long, 2.5–3.5 mm





FIGS. 1-5. *Ichthyothere*, leaves, 1 cm scale, corollas, 1 mm scale. 1, 3. *I. macdanielii*, 1, leaf showing pinnate venation, 2, corolla with short throat and anthers. 2, 4. *I. pastazensis*, 2, leaf showing trinervate venation, 2, corolla showing short throat and anthers. 5. *I. peruviana*, corolla showing long throat and anthers. 1. *McDaniel et al.* 27587 (US). 2, 4. *Brandbyge & Asanza* 30856 (US). 3. *McDaniel & Rimachi* 18978 (US). 5. *Vargas* 11742 (US).

wide, subangulate with scarious wings on upper margin, apex obtuse and apiculate. Female florets 2 or 3; corollas tubular, strongly bent to one side at base, ca. 1 mm long, with gland-tipped hairs and uniseriate and biseriate non-glandular hairs; style branches scarcely broadened. Male florets ca. 30; corollas whitish, 3.0–3.5 mm long, mostly glabrous, basal tube 1.2–1.5 mm long, throat, narrowly campanulate to nearly cylindrical, 1.3–1.5 mm long, with slender veins, lobes, ca. 0.7 mm long, with numerous glands outside; anther thecae 0.8–1.0 mm long. Achenes of female florets oblong to obovate, 4–5 mm long, 2.0–2.5 mm wide, with 3 costae on inner and outer surfaces when mature, not tuberculate in material seen, glabrous. Pollen grains ca. 25  $\mu$ m in diam.

TYPE: PERU. LORETO: Dtto. Fernando Lores, Quebrada de Tamishiyacu, trail from Alianza toward Algodon, 6 Jul 1974, *McDaniel & Rimachi* 18978 (HOLOTYPE: US; ISOTYPES: AMAZ, IBE, US, USM).

PARATYPE: PERU. LORETO: Maynas. Dtto. Fernando Lores, Quebrada de Tamishacu, trail



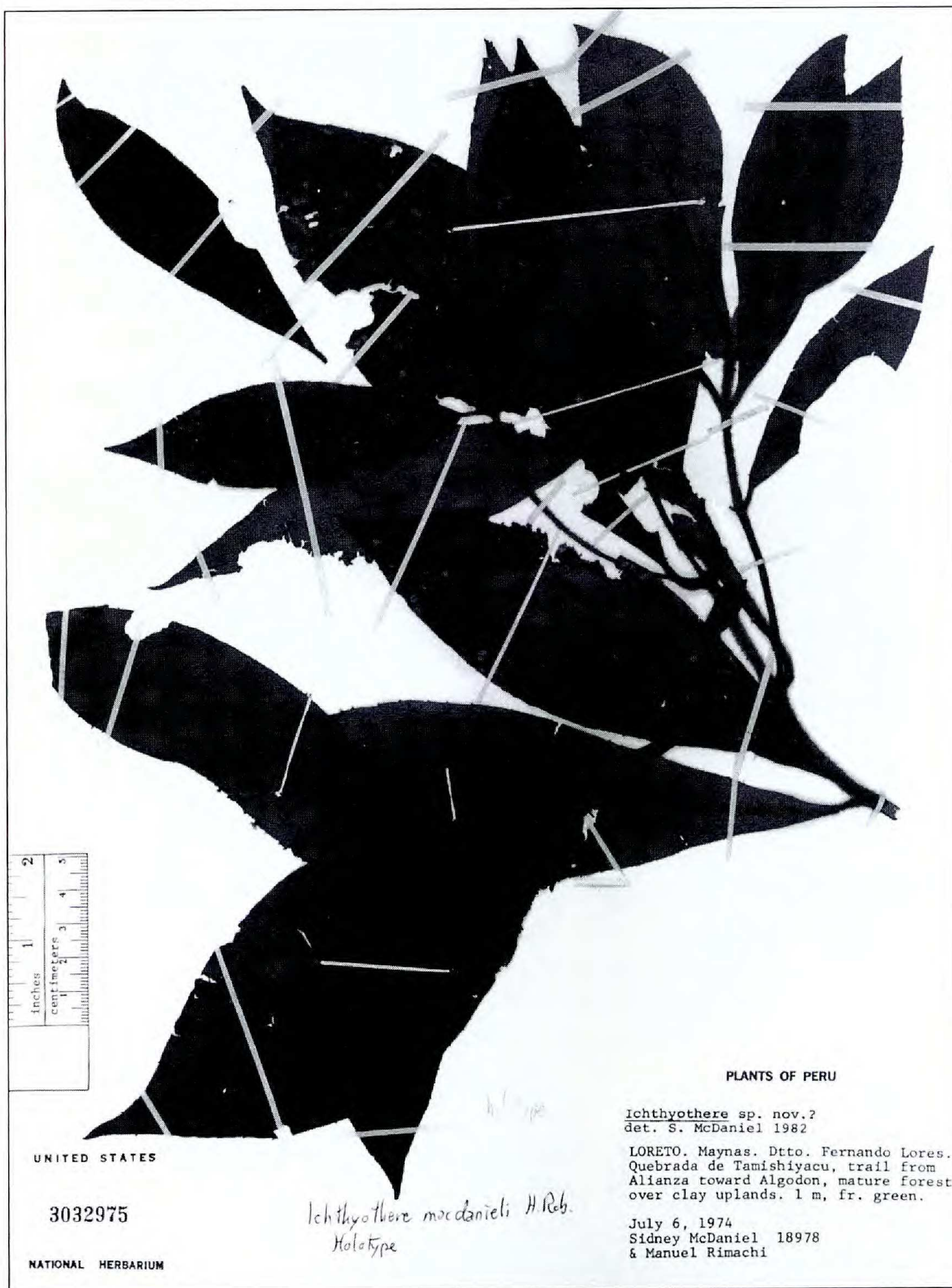


FIG. 6. *Ichthyothere macdanielii* H. Rob., holotype, United States National Herbarium.



from Nueva Chachapoya to Río Manatí, 100–120 m, 7 Jan 1984, *McDaniel, Rimachi & McMannes* 27587 (AMAZ, IBE, US, USM).

The species was collected in mature “upland” forest over clay or chacra. The species distinctions are discussed below.

***Ichthyothere pastazensis* H. Rob., sp. nov.** (Figs. 2, 4, 7)

Ad *I. peruviana* affinis sed in floris masculinis minoribus et acheniis radiis tuberculatis differt.

Small shrubs ca. 0.7 m high, moderately branched; stems brownish, striated, antrorsely pilose with pale hairs, narrowly fistulose. Leaves opposite, petioles 0.2–0.4 cm long; blades membranaceous to thinly herbaceous when dry, ovate to broadly elliptical, 5–11 cm long, 2–5 cm wide, acute to shortly acuminate at base and apex, margins remotely, minutely denticulate, upper surface pilose, lower surface with antrorsely appressed pilosity denser on veins, with many minute glandular dots; two pairs of ascending secondary veins near base, pairs separated by ca. 0.5 cm, upper of the pairs reaching distal fifth of blade. Inflorescences terminal and sessile on leafy stems and branches, with few, short branches bearing heads sessile in dense seriate-cymes, bracteoles to 8 mm long, bracteoles at base of heads 2–3 mm long. Heads 4–6 mm high, subspherical; outer large involucre bracts 2 or 3, subtending female florets, broadly obovate, 4–5 mm long, ca. 3 mm wide, apex shortly apiculate, outer surface with numerous stout, multiseriate hairs; inner bracts and pales ca. 20, subtending male florets, obovate, ca. 4 mm long, 3 mm wide, with scarious, denticulate angles on upper margins, apex shortly obtuse and apiculate, with few or no hairs outside. Female florets 2 or 3; corolla tubular, without evident basal bend, ca. 1 mm long, with dense brush of long trichomes, biseriate-stalked glands mixed with uniseriate and biseriate non-glandular hairs; style branches not or scarcely broadened. Male florets ca. 20; corollas yellowish green, ca. 3 mm long, tubes ca. 1.2 mm long, throats ca. 1.5 mm long, very narrowly funnelform to nearly cylindrical, with narrow veins, lobes ca. 0.7 mm long and wide, with numerous glandular dots outside; anther thecae ca. 1 mm long. Achenes of female florets obovate, ca. 5 mm long, 3 mm wide, surface strongly tuberculate with age on margins and costae, glabrous, without striations or furrows. Pollen grains ca. 30  $\mu$ m in diam.

TYPE: ECUADOR. PASTAZA: Lorocachi, on path to Lagartococha, 01°38'S, 75°58'W, 200 m, 25 May 1980, *Brandbyge & Asanza* 30856 (HOLOTYPE: US; ISOTYPE: AAU).

The species is known only from the type collected in a wet primary rain forest.

The related *Ichthyothere peruviana* is distributed from San Martín southward to Cuzco, Madre de Dios and Puno in Peru. The more typical north-





UNITED STATES

3206230

NATIONAL HERBARIUM

*Ichthyothere pastazensis* H. Rob.  
Holotype

FLORA OF ECUADOR

Collected by J. Brandbyge

E. Asanza C.

30856

*Ichthyothere peruviana* (Poepp. & Endl.) Baker

Compositae

det. H. Robinson

Province PASTAZA

Lorocachi. On the path to Lagartococha. Wet type of primary forest.

(75° 58' W 01° 38' S) Alt. 200 m.

25 May 1980

Shrublet 0.7 m. Leaves subscabrous. Inflorescences yellowish green.

Botanical Institute, Aarhus University, Denmark (AAU)  
in collaboration with P. Universidad Católica, Quito, Ecuador (QCA)

FIG. 7. *Ichthyothere pastazensis* H. Rob., holotype, United States National Herbarium.



ern material has its lower leaves with longer petioles and longer acuminate leaf blade bases. The specimens of the species vary in the hirsute pubescence of the stems and inflorescence. Nevertheless, all elements recognized here in *I. peruviana* have distinctly broadened style branches in the ray florets, long and slender throats on the male corollas, 2.5–3.0 mm long, and slender anther thecae, nearly 2 mm long (Fig. 5). The leaf tips are usually narrowly acuminate. The details of the northern element of *I. peruviana* are represented well in the plate by Poeppig (1843, pl. 252), the long petioles of the lower leaves, long lower secondary veins of the leaf, elongate anther thecae, even distribution of hairs on the ray corolla, and broad branches of the ray style.

The two new species are somewhat disjunct to the north of *Ichthyothere peruviana* but have all the leaves with shorter petioles as in the southern material of *I. peruviana*. Both new species have acute to slightly acuminate leaf tips, longer hairs on the ray corollas concentrated on the distal half, style branches of the rays scarcely broadened, shorter disk corolla throats, ca. 1.5 mm, and shorter anther thecae, 0.7–1.0 mm (Figs. 3, 4). The species from Loreto, Peru, is particularly unusual in the genus by the pinnate leaf venation (Fig. 1). Other species of *Ichthyothere*, including *I. peruviana* and *I. pastazensis* (Fig. 2), have leaves that are obviously tri- to quinque-nervate or have lower veins that spread at the base but arch upward to near the leaf apex. The pilosity on the upper leaf surface of *I. macdanielii* is longer than that of related species, and the female corolla is strongly bent at the base. The type of *I. macdanielii* has unusually long cuneate bases on some leaf blades, but such bases occur in only some leaves of the type and are lacking in the paratype.

From near the Peruvian border in Ecuador, *Ichthyothere pastazensis* has smaller leaves (Fig. 2), more branched plants, and the mature achenes are strongly tuberculate. The pressed specimens of the Ecuadorian plant show a number of branches, while the longer segments of *I. macdanielii* and *I. peruviana* on the herbarium sheets rarely show any branching. The tuberculate condition of the achenes in *I. pastazensis* develops only at maturity, but such tuberculae have not been seen in any apparently mature achenes of either *I. macdanielii* or *I. peruviana*.

#### ACKNOWLEDGMENTS

Sidney McDaniel, of Mississippi State University, has furnished information on the distribution of his collections. Photographs by John Steiner, Staff Photographer, National Museum of Natural History.

#### REFERENCE

POEPPIG, E. 1843. Nova genera ac species plantarum 3(5–6):33–52, pl. 241–260.